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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,567	12/27/2005	Atsushi Sone	1600-0162PUS1	7878
2292	7590	07/11/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			CHEN, VIVIAN	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	

1773

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/562,567

Applicant(s)

SONE ET AL.

Examiner

Vivian Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/27/05;3/27/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over:

IKEYAMA ET AL (US 6,166,855), in view of OKA ET AL (US 5,747,152).

IKEYAMA ET AL discloses a scratch-resistant antireflection film comprising a transparent polymer film substrate (e.g., polyester or cellulose), a hard high refractive index layer, and a porous low refractive index layer, wherein the high refractive index layer has a typical refractive index of 1.65-2.40, and wherein the low refractive index layer has a typical refractive index of 1.20-1.55. The antireflection film is suitable for application on optical devices. (entire document, see Figure 1(c); line 35-50, col. 3; line 42-57, col. 4; line 61, col. 5 to line 12, col. 6; line 48-60, col. 7; line 5-55, col. 9) However, the reference does not explicitly disclose the recited relationship between the high and low refractive index values.

OKA ET AL '152 discloses that it is well known in the art that it is desirable to set the refractive index of a low refractive index antireflection layer to be equal to the square root of the refractive index of the underlying higher refractive index layer in order to minimize reflections. The reference further discloses that it is well known in the art to apply antireflection films to

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optical devices such as polarizing plates. (entire document, see Figure 15; line 48-68, col. 2; line 12-25, col. 3; line 22, col. 22 to line 14, col. 23; line 1-17, col. 26; line 17-50, col. 27; line 50, col. 29 to line 35, col. 30; line 20-57, col. 31)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to select the refractive index of the low refractive index layer to substantially match the square root of the refractive index of a hard underlying layer in order to minimize reflections. It would have been obvious to minimize known optical defects such as die lines in the film substrate (claim 4) in order to avoid surface irregularities and visual distortions in subsequently applied optical coatings.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over IKEYAMA ET AL (US 6,166,855), in view of OKA ET AL (US 5,747,152), as applied to claim 1 above, and further in view of OSHIMA ET AL (US 6,844,403).

OSHIMA ET AL discloses that it is well known in the art to use cycloolefin films as an alternative to other film substrates (e.g., polyesters) in protective antireflection films for optical applications. (line 59, col. 4 to line 3, col. 5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize cycloolefin films as substrates for the films in IKEYAMA ET AL in order to form durable antireflection films.

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Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 24, 2006



Vivian Chen
Primary Examiner
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